IN THE CLAIMS:

1. (Currently Amended) A process for pressure welding, friction welding or Magnetarc welding of workpieces the process comprising the steps of:

measuring the actual length of one or both of said workpieces and a possible length deviation Δl from a set value;

changing a set value of at least one process parameter from process parameters comprising: friction length, friction duration, arc time and forge force, in case of length deviations, wherein the at least one process parameter is changed in terms of its characteristic, with a parameter profile varying in time and/or space;

determining a correction factor C, by which a length deviation Δl is multiplied for the change in said set value, said correction factor C defining a correlation of plasticization of at least one of said workpieces with a compression stroke of at least one of said workpieces; and

compensating said length deviation Δl by modifying plasticization of at least one of said workpieces and altering said compression stroke of at least one of said workpieces based on said correction factor C.

2. (Previously Presented) A process in accordance with claim 1, wherein said correction factor C is obtained empirically in a test series.

3. (Previously Presented) A process in accordance with claim 1, wherein said correction factor C is determined in an application-dependent manner.

4. (Previously Presented) A process in accordance with claim 2, wherein the test series are carried out in an application-specific manner on sample workpieces from a series batch.

5. (Previously Presented) A process in accordance with claim 1, wherein the welding quality is taken into account in the determination of said correction factor C.

6. (Previously Presented) A process in accordance with claim 1, wherein upper and lower limits for length deviations Δl and for said corresponding correction factors C are determined and stored, and said correction factor C is determined during the welding operation for measured length deviations Δl in this range by interpolation.

7. (Previously Presented) A process in accordance with claim 1, wherein a change in friction length, Δs, is calculated as a product of a correction factor C_s by the length deviations Δl in case of friction welding with friction length control.

8. (Previously Presented) A process in accordance with claim 1, wherein a change in friction duration, Δt, is calculated as the product of a correction factor C_t by the length deviations Δl in case of friction welding with friction duration control.

9. (Previously Presented) A process in accordance with claim 1, wherein a change in the forge stroke, Δp, is calculated as the product of a correction factor C by the length

deviations Δl in case of friction welding with short-time control.

10. (Previously Presented) A process in accordance with claim 1, wherein the forge force is changed.

11. (Canceled)

12. (Previously Presented) A process in accordance with claim 1, wherein determined correction values C with reference data for said workpieces are stored in a data bank which can be connected to a pressure welding machine performing the welding.

13. (Previously Presented) A device for pressure welding, friction welding or Magnetarc welding of workpieces, the device comprising:

a feed unit;

a control; and

a measuring means for determining the actual length of one or both of said workpieces and a length deviation Δl, wherein a set value of at least one process parameter comprising friction length, friction duration, arc time or forge force is changed in said control in case of a length deviation Δl, said control having a computing unit for setting and changing said set value of said at least one process parameter based on a correction factor C, said correction factor C defining a correlation between plasticization of one or both of said workpieces and a

compression stroke of one or both of said workpieces, said control compensating for said length deviation Δl by modifying plasticization of one or both of said workpieces and altering said compression stroke of one or both of said workpieces based on said correction factor C.

14. (Previously Presented) A device in accordance with claim 13, wherein said control is programmable, wherein said computing unit is connected to at least one memory and has a program for determining, or interpolating, the correction factor C from stored preset values.

15. (Previously Presented) A device in accordance with claim 13, wherein a change in the forge stroke, Δp, is calculated as the product of a correction factor C by the length deviations Δl in case of friction welding with short-time control.

16. (Previously Presented) A process for pressure welding, friction welding or Magnetarc welding of workpieces the process comprising the steps of:

providing two workpieces;

measuring an actual length of at least one of said workpieces and a possible length deviation Δl from a set workpiece length value;

determining a correction factor C, by which a length deviation Δl is multiplied to form a length correction factor, said correction factor defining a correlation of a change in plasticization of at least one of said workpieces with a change in compression stroke of at least one of said workpieces; and

changing a set value of at least one process parameter from process parameters comprising: friction length, friction duration, arc time and forge force, based on said length correction factor when said actual length of said at least one of said workpieces deviates from said set workpiece length value including altering plasticization of said at least one of said workpieces and altering compression stroke of said at least one of said workpieces based on said correction factor C such that said length deviation Δl is compensated.

17. (Previously Presented) A device in accordance with claim 16, wherein a change in the forge stroke, Δp, is calculated as the product of a correction factor C by the length deviations Δl in case of friction welding with short-time control.

18. (Previously Presented) A process in accordance with claim 16, wherein said correction factor C is obtained empirically in a test series.

19. (Previously Presented) A process in accordance with claim 16, wherein said correction factor C is determined in an application-dependent manner.

20. (Previously Presented) A process in accordance with claim 19, wherein the test series are carried out in an application-specific manner on sample workpieces from a series batch.